

## GOITRES

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THE etiology of goitre is not yet understood. In certain districts, such as Switzerland, the Tyrol, and Savoy, it may be endemic, while in other places it may assume an epidemic form.

It occurs oftener in females, and as a rule begins at the age of puberty, though it may also occur during gestation. It may be congenital, but is usually acquired. Some authorities claim that the agent causing goitre is found in water.

The thyroid gland somewhat resembles a horse-shoe, the two lobes, one on each side of the trachea, being connected across its upper ring by the isthmus. They are about two inches long, and smaller at the upper portion. The weight is from one to one and one-half ounces. A thin, fibrous capsule invests this entire gland, a portion of which passes separately behind the trachea and esophagus to connect with the opposite side. To this structure is due many of the symptoms of pressure which occur in tumors enclosed in this dense capsule, the growth within which interferes with swallowing, breathing, or speaking.

The blood supply of the thyroid is remarkably extensive for an organ of its size. The vessel anastomosis is very free. The external carotids supply the upper poles through the superior thyroid arteries, while the inferior thyroids from the thyroid axis on each side supply more directly the larger part of the gland. The main veins are the superior, middle, and inferior, although others seem to develop in diseased organs. The nerve supply is from the sympathetic. In intimate relation with the right inferior artery is the recurrent laryngeal nerve, which lies in the space between the trachea and esophagus, and is often so affected by pressure of tumors, operation, or scar tissue as to cause hoarseness. On the left side the recurrent is usually more deeply set, and not in such close relation with the artery.

Associated in function but less understood are the parathyroids, four small glands, two on either side of the neck, behind or within the investing gland capsule. These glands are seldom seen in surgical work upon the thyroid or adjacent structure, unless they are themselves enlarged by disease. In review of foreign literature, it is stated that

tetany cannot be produced by complete removal of the thyroid gland so long as the parathyroids are left.

The function of the thyroid gland is not fully understood. The loss or lack of function of the thyroid gland in the very young prevents mental and physical development; its loss in the young adult causes mental deterioration; while in adults the frequency with which myxœdema follows the complete removal of the gland accounts for the wholesome respect which surgeons hold for this organ.

Cretinism may be defined as the arrest of mental and physical growth that develops early in life when function of the gland is lost or impaired. Cretinism usually begins at the age of from two to five years. It is closely connected with goitres, as is shown in goitrous districts.

The hyperplasia of goitre may be nodular, uniform, partial, or diffuse. The size may vary from a moderate swelling to huge, pedunculated masses. The goitres usually found in young people from eighteen to twenty-five are the so-called simple goitre, a parenchymatous enlargement, with excess of colloid, which usually recovers with or without treatment. Irregular enlargements may be adenomata, cysts, or an unevenly developed colloid goitre. The consequences of goitre depend upon the form, its seat and direction of growth, the most frequent danger being tracheal compression.

The symptoms of simple goitre may be moderate tachycardia, dyspnœa, and occasional vertigo. Treatment is usually medical, excepting in extreme cases, when an operation is necessary.

In the exophthalmic goitre there is a condition of hypertrophy of the thyroid gland, with very little of a colloid condition. Instead of one row of cells lining the acini, we have two, three, and four. Not having room, it unfolds like the cortex of the brain, so as to get still more cells, so there is an excess of cell life or activity, it being about four times more active than in a normal condition. This toxic product of the gland acts principally on the circulatory and nervous system.

The chemical composition of this gland when diseased has not been actually determined, but it is generally understood that it is not only increased in quantity, but also in quality. Exophthalmic goitre presents other symptoms than those produced by overdoses of thyro-iodine, medicinal doses of which as a rule aggravate certain features of exophthalmic goitre.

The symptoms of exophthalmic goitre are exophthalmos, which is due to a local vasomotor change of blood vessels; tachycardia, muscular spasms, mental excitement, sleeplessness, excessive sweating, anomalous pigmentation of the skin, and paralysis.

Treatment is perfect test if pulse is rapid. Diet should consist of easily digested food, and as much fluid as possible should be taken. Ext. Bella. gr.  $\frac{1}{6}$  may be given three or four times a day. Ice-bag over thyroid gland or over pericardium for several hours daily will be beneficial. Iodines should be used cautiously, and Dr. Kocher recommends them to be used in the form of an ointment. For the introduction of the operative treatment, we are indebted to Dr. Kocher, of Berne, who has performed the largest number of operations for goitre; and for the perfection of the operative treatment we are indebted to Dr. C. H. Mayo, of Rochester, Minnesota, who has performed the largest number of operations for exophthalmic goitres. Dr. Mayo's preparation for operation is the use of the X-ray for from one to three weeks. This making the gland more fibrous, and slowing the heart's action, an effort should be made to reduce the pulse to 120 if possible before operation.

Just before going to operating-room, the patient is given a hypodermic of Morph. Sulp. gr.  $\frac{1}{6}$ , Atrop. Sulp. gr.  $\frac{1}{120}$ . The anæsthetic is ether, which has been used very successfully. In the operation the right lobe, the isthmus, and part—about one-half—of the left lobe are removed. The one-half of the left lobe is sufficient to supply the system with the secretion.

The causes of death are anæsthetic shock, hemorrhage, air embolism, pneumonia, suffocation, acute thyroidism, and infection. On returning from operating-room, the patient is given saline solution one quart, per rectum, by drop method, it taking about one hour to give this amount. This may be given about every eight hours. This solution, being taken up by the lymphatics, will lessen the toxic effect on the system. Morp. gr.  $\frac{1}{6}$  and Atrop. gr.  $\frac{1}{120}$ , may be given every six or eight hours to keep the patient as quiet as possible.

The pulse may be very rapid, and fluctuate from 120 to 180 or more for the first forty-eight hours. Ice-cap over pericardium may be used when pulse is very rapid. After first forty-eight hours, patient improves rapidly. Tachycardia and nervousness are then well under control, pulse gradually coming to normal.

The exophthalmos is less after the first few days, it taking about one year for the eyes to become normal.

The diet should be fluid or very soft for the first few days, it being a little difficult for patient to swallow, on account of the throat being sore.

Dr. J. Rogers, of New York, has presented a method which augurs well for the treatment of exophthalmic goitre. He has been led to his investigation of the disease through the sufferings of his wife. When

her condition became so severe that it seemed as if she was about to die, he became desperate enough to try some serum experiments for himself. Dr. Rogers made some emulsions of recently excised goitrous thyroid glands, and injected them into a rabbit. From the animal he obtained a serum, one injection of which practically annihilated all the symptoms of goitre in his wife.

The condition of the patient whom he so treated was so alarming when these injections were made that he as yet has hesitated about putting this serum in the hands of the profession, and he refuses to use it except in extreme cases, where even a surgeon prefers not to undertake surgical intervention.

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## PRENATAL INFLUENCES

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"PRENATAL Influence" is a subject in which I have always been interested, and about which I have found very little written. I present it to you as I find it treated in our latest medical authorities.

Destined as woman has been from the foundation of the world to pass through this period of reproduction and parturition in order to propagate the race, child-birth should be regarded as an absolutely normal process.

It is a function for which woman has been especially designed. Her pelvic conformation, the provision allotted for the maintenance of her offspring after birth, her characteristic maternal instincts, all indicate the noble purpose for which she was created.

It has been found that in the human being gestation covers a period of 280 days, ten lunar months, or nine calendar months. Proper attention to hygienic rules should be observed by every pregnant woman.

1st. The diet should be nutritious, plain, and easily digestible.

2d. The clothing should be loose, with corsets and garters discarded.

3d. Gentle daily outdoor exercise, especially during the first six months, while the physical part of the child is rapidly developing; later on, when the mental faculties are rapidly developing, include mental recreation.

4th. Bathe daily in water neither too hot nor too cold, the bowels to move at least once daily.

Now, these precautions, as we see, are only following out ordinary